

Claims

Claimed is:

1. A process for the production of a disintegrator roll of an open-end spinning apparatus with a shredding-element designed as a sawtooth wire, which is inlaid in a groove of a shredding-element carrier, therein characterized, in that the sawtooth wire is converted into a shape, which essentially corresponds to that shape, which the sawtooth wire is to assume on the shredding-element carrier, and the preshaped sawtooth wire is to be subsequently hardened.
2. A process in accord with Claim 1, therein characterized, in that the sawtooth wire is preshaped on a preshaping body, the circumference of which is essentially that of the shredding-element carrier of the disintegrator roll.
3. A process in accord with Claim 2, therein characterized, in that the sawtooth wire, during the hardening procedure, remains on the preshaping body.
4. A process in accord with Claim 1, therein characterized, in that the sawtooth wire is shaped by being wound on the shredding-element carrier of the disintegrator roll, and is hardened while it remains on the said shredding-element carrier.
5. A process in accord with one or more of the Claims 1 to 4, therein characterized, in that the ends of the sawtooth wire which are to be found on the shredding-element carrier are subjected to a grinding procedure.
6. A process in accord with one of more of the Claims 1 to 5, therein characterized, in that the shredding-element is hardened by induction.
7. A process in accord with Claim 6, therein characterized, in that the shredding-element is hardened by means of a high frequency current.
8. A process in accord with Claim 7, therein characterized, in that the surface of the shredding element in the area of its teeth is hardened by induction with an

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alternating current with a frequency of more than 100 kHz, especially with a frequency in a range between 1500 and 2000 kHz.

9. A process in accord with one or more of the Claims 1 to 8, therein characterized, in that the shredding-element is hardened in a protective gas.
10. A process in accord with one or more of the Claims 1 to 9, therein characterized, in that the shredding-element is stress-relieved after the hardening by means of a heat treatment.
11. A process in accord with one or more of the Claims 1 to 10, therein characterized, in that the shredding-element is particle blasted after the hardening.
12. A process in accord with Claim 11, therein characterized, in that the shredding-element is blasted with the aid of glass pearls.
13. A process in accord with one or more of the Claims 1 to 12, therein characterized, in that the shredding-element is demagnetized.
14. A process in accord with one or more of the Claims 1 to 13, therein characterized, in that the shredding-element is chemically deburred.
15. A process in accord with one or more of the Claims 1 to 14, therein characterized, in that the shredding-element is coated.
16. A process in accord with Claim 15, therein characterized, in that the shredding-element is coated by nickel-plating.
17. A process in accord with one or more of the Claims 1 to 16, therein characterized, in that the tooth points of the shredding-element are subjected to a grinding procedure.
18. A process in accord with Claim 17, therein characterized, in that the points of the teeth are subjected to grinding in a direction counter to their operational direction.

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19. A process in accord with Claim 18, therein characterized, in that the shredding-element carrier of the disintegrator roll with the affixed sawtooth wire and the grinding disk of the grinding procedure are driven in opposite directions.
20. A process in accord with one or more of the Claims 1 to 19, therein characterized, in that the sawtooth wire, before it is brought into shape, is a non-hardened wire.
21. A process in accord with one or more of the Claims 1 to 20, therein characterized, in that a non-hardening material is used for the shredding-element carrier.
22. A process in accord with Claim 21, therein characterized, in that, as a base material, a low carbon steel is employed.
23. A process in accord with one or more of the Claims 1 to 22, therein characterized, in that the start and/or the end of the sawtooth wire is welded to the shredding-element carrier.
24. A process in accord with one or more of the Claims 1 to 23, therein characterized, in that the sawtooth wire is plasma coated.
25. A process in accord with Claim 24, therein characterized, in that the coating is effected with titanium nitride.
26. A disintegrator roll for an open-end spinning apparatus, wherein the disintegrator roll has been manufactured by one or more of the Claims 1 to 18, with a shredding-element carrier, on which is mounted a sawtooth wire, therein characterized, in that the sawtooth wire (20) is a steel wire at least partially hardened following its shaping.
27. A disintegrator roll in accord with Claim 26, therein characterized, in that the sawtooth wire (20) is a hardened steel wire after being affixed to the shredding-element carrier (10).

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28. A disintegrator roll in accord with Claim 26 or 27, therein characterized, in that the shredding-element is constructed as an inductive hardened sawtooth wire (20).
29. A disintegrator roll in accord with one or more of the Claims 26 to 28, therein characterized, in that the shredding-element carrier (10) is made of low carbon steel.
30. A disintegrator roll in accord with one or more of the Claims 26 to 29, therein characterized, in that the start and/or the end of the sawtooth wire (20) is welded to the shredding-element carrier (10).
31. A disintegrator roll in accord with one or more of the Claims 26 to 30, therein characterized, in that the sawtooth wire (20) is plasma coated.
32. A disintegrator roll in accord with Claim 31, therein characterized, in that the sawtooth wire (20) is coated with titanium nitride. 33. A disintegrator roll in accord with one or more of the Claims 26 to 32, therein characterized, in that the sawtooth wire (20) in the foot-area of its teeth occupies a lateral groove.

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